

Science: Miss Nixon (Assistant Principal - Science)

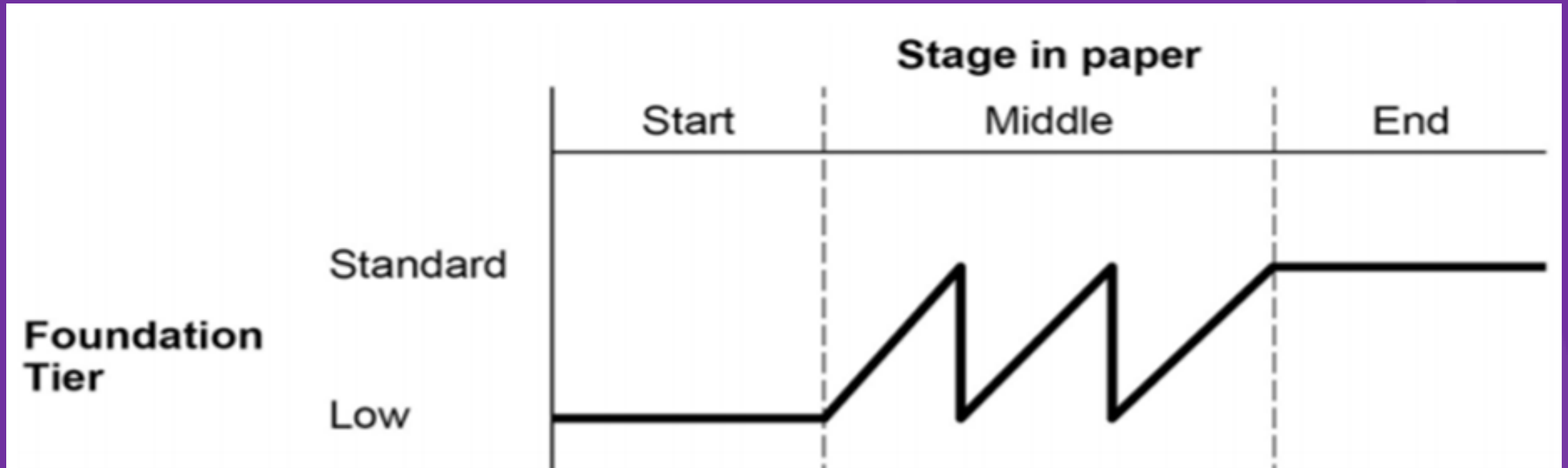
Triple Science (3 GCSEs) - Edexcel

Combined Science (2 GCSEs)– Edexcel/AQA

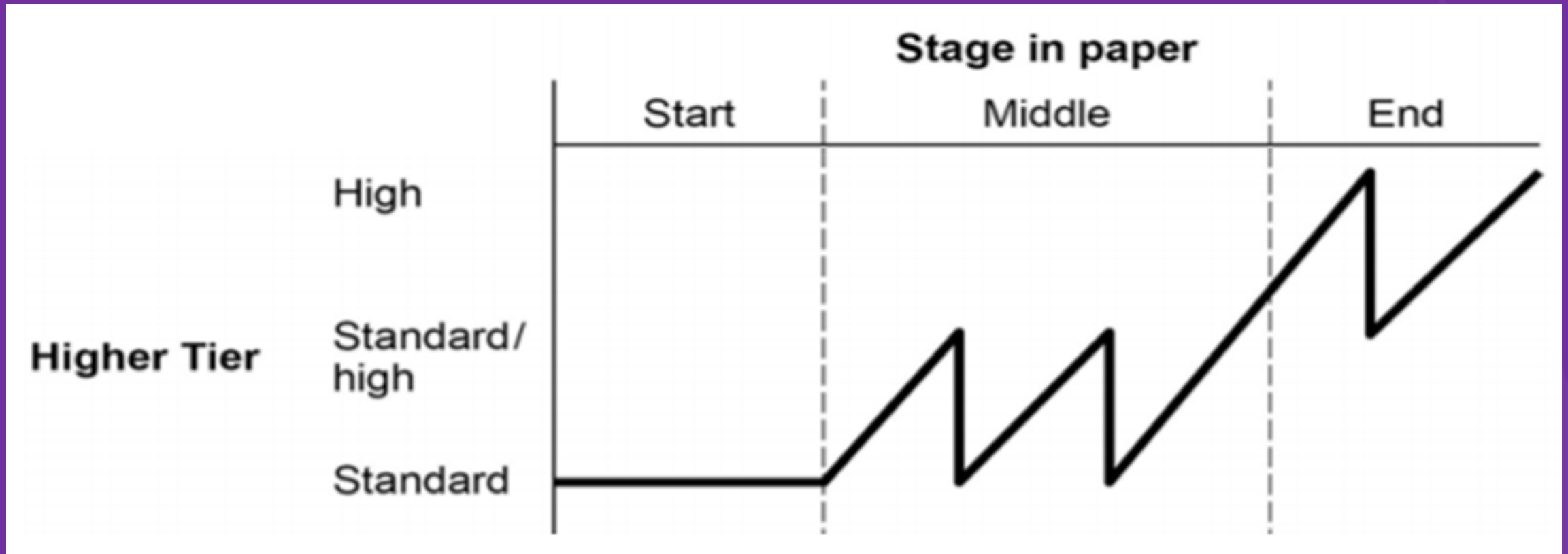
What are the assessments in Science?

	Triple Science (3 GCSEs)	Combined Science (2 GCSEs)
Biology paper 1 Chemistry paper 1 Physics paper 1	All papers 1 hour 45 mins	All papers 1 hour 10mins/1 hour 15mins
May half term		
Biology paper 2 Chemistry paper 2 Physics paper 2	All papers 1 hour 45 mins	All papers 1 hour 10mins/1 hour 15mins

How are the assessments structured?



How are the assessments structured?



What will the assessments measure?

1. Assessment objectives:

AO1 (40%): **Demonstrate knowledge** and understanding of scientific ideas and techniques.

AO2 (40%): **Apply knowledge** and understanding scientific ideas and techniques.

AO3 (20%): **Analyse** information and ideas.

2. Maths skills

3. Practical skills

How our students are supported

1. Assessment objectives

AO1 (40%): **Demonstrate knowledge** and understanding of scientific ideas and techniques

BIOLOGY PAPER 1: Cell Biology Part 1	
Facts: Eukaryotic and prokaryotic cells	
1. Eukaryotic cell	Has a nucleus that contains DNA, cytoplasm and a cell membrane. Examples: Animal and plant cells.
2. Prokaryotic cell	Does not have a nucleus, DNA is loose in the cytoplasm and as rings of DNA called plasmids. Example: Bacteria.
3. Size	Prokaryotic cells are much smaller than eukaryotic cells.
Facts: Animal and plant cells	
4. Nucleus	Contains the genetic material (DNA) of a cell and controls the activities of a cell. Animals and plants.
5. Cell membrane	Controls the movement of substances into and out of the cell. Animals and plants.
6. Cytoplasm	Where chemical reactions such as aerobic respiration take place. Animals and plants.
7. Mitochondria	Where aerobic respiration that produces energy happens. Animals and plants.
8. Ribosome	Synthesise (make) proteins. Smaller than mitochondria. Animals and plants.
9. Vacuole	Filled with cell sap to push the cell contents against the cell wall and keep the cell turgid. Plants only.
10. Chloroplast	Contains a chemical called chlorophyll which absorbs light for photosynthesis. Plants only.
11. Cell wall	Made of cellulose, provides structure and support for the cell. Plants only.

How our students are supported

1. Assessment objectives

AO2 (40%): **Apply knowledge** and understanding scientific ideas and techniques

Key knowledge needed:

What is diffusion?

State two examples of diffusion in living organisms.

What is active transport?

State two examples of active transport in living organisms.

The table shows the concentrations of three mineral ions in the roots of a plant and in the water in the surrounding soil.

Mineral ion	Concentration in millimoles per kilogram	
	Plant root	Soil
Calcium	120	2.0
Magnesium	80	3.1
Potassium	250	1.2

- (a) (i) The plant roots could **not** have absorbed these mineral ions by diffusion.
Explain why.

How our students are supported

Our weekly morning meetings focus on:

1. Assessment objectives

AO3 (20%): **Analyse** information and ideas.

2. Maths skills

Our next steps

- Analysis of mock data to identify areas of weakness.
- Afterschool intervention focus on closing gaps in knowledge.
- Provision of application question booklets on knowledge identified as secure.
- The development of online resources that students can access remotely.
- A shift in homework provision to a focus on extended response questions and practical skills.
- Encourage students to attend afterschool revision and contribute positively.
- Support students with completing their LCWC homework and use the knowledge navigators to quick quiz.
- Encourage the use of websites such as BBC Bitesize, Seneca and [freesciencelessons.com](https://www.freesciencelessons.com).